

REMARKS

Claims 1-40 were presented for examination. The Office Action mailed November 29, 2007 rejects claims 1-40. Applicants herein amend claims 1, 3-5, 11, 12, 18, 19, 25 and 26 to more clearly recite Applicants' invention. Applicants herein cancel claims 2 and 13. Claims 1, 3-12 and 14-40 are now pending in the application.

Rejection of Claims 1-33 and 36-40 under 35 U.S.C. §103(a)

The Office Action rejects claims 1-33 and 36-40 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,694,495 to Hara et al. (hereafter "Hara") in view of U.S. Patent No. 6,791,603 to Lazo et al. (hereafter "Lazo"). Claims 2 and 13 are canceled herein therefore their rejection is rendered moot. Applicants respectfully traverse the rejection to the extent it is maintained against claims 1, 3-12, 14-33 and 36-40 as now set forth because the cited references do not teach or suggest each and every element of Applicants' claimed invention.

Applicants' invention relates to an optical asset tracking system. The system is based on an image sensor and a sensor processor. The imaging sensor includes pixels that generate pixel video data that are part of the video data for video images formed on the image sensor. Each pixel can also generate a communications data signal in response to an optical data signal incident on the pixel. (See, e.g., FIG. 2 and paragraphs [00019] and [00023]) Optical data signals are emitted by optical tags fixed to assets being tracked by the system. The optical data signals are modulated according to the asset data for the respective assets. An optical data signal is incident on a pixel only if the optical tag emitting the signal is present in the portion of the image corresponding to the pixel.

Applicants' independent claim 1 as now set forth recites, in pertinent part, "an image sensor having a plurality of pixels, each pixel configured to generate video data responsive to light incident on the pixel from a respective portion of an image generated on the image sensor

and configured to generate a communications data signal responsive to an optical data signal incident on the pixel and emitted by an optical tag if the optical tag is present in the respective portion of the image” where the optical data signal is “modulated according to asset data for an asset associated with the optical tag.”

Hara discloses an image sensor capable of determining the position of light incident on an image sensor. Hara addresses how to efficiently read only that portion of the image sensor that receives the light in order to avoid the extra processing required for examining the entire image sensor. The portion receiving the light can change over time. A controller generates a control signal for reading signals only from the portion receiving the light. (See, e.g., Abstract and col. 3, line 56 to col. 4, line 19) Consequently, regions of the sensor that do not assist in determining the position of the light can be ignored and computational efficiency is improved.

In contrast to Applicants’ claimed optical asset tracking system as recited in claim 1, Hara’s image sensor does not include pixels (i.e., optical detectors or sensor cells 13) that can generate both video data responsive to light incident on the pixel from a respective portion of an image formed on the image sensor and a communications data signal responsive to an optical data signal incident on the pixel and emitted from an optical tag present in a corresponding part of the image. Even if the data generated by an optical detector 13 is construed to be equivalent to Applicants’ recited video data, such data cannot also be the second type of data provided by Applicants’ pixels, namely the communications data signal that is generated in response to the optical data signal modulated according to asset data. Moreover, Hara does not disclose that the light incident on the image sensor is modulated with any data. Thus Hara does not teach or suggest pixels that can generate communications data signals in response to an optical data signal from an optical tag.

Lazo discloses a system that identifies and tracks assets that move between surveillance zones. A triggering event initiates video tracking as an asset moves from one zone monitored by a camera to a different zone monitored by another camera. One or more

zone sensors are used to determine the triggering event and to enable the tracking as the asset transitions from one zone to another zone.

The Office Action states that Hara does not disclose the optical tag emitting an optical data signal, but points out that Lazo teaches the use of RFID tags. The Office Action states that Lazo does not specifically disclose an optical tag for emitting an optical data signal, but that Lazo suggest other types of sensors such as infrared sensors, optical sensors and other types of tracking sensors can be used to track assets. The Office Action cites col. 2, line 62 to col. 3, line 17 to show Lazo's suggestion for other types of sensors. The Office Action claims that it would have been obvious to replace Lazo's RFID tags with optical tags and to combine this result with the teachings of Hara to achieve all the limitations of Applicants' claim 1. Applicants respectfully disagree. Applicants first point out that sensors are not active devices that emit signals. Moreover, Lazo's sensors are used to detect the occurrence of a triggering event so that the cameras from other zones can be employed to track assets as they transition between zones. Even if Lazo's sensors were to detect optical energy, there is nothing in the cited text or elsewhere in Lazo that suggests the use of optical signals modulated with the asset data. Even if modulated optical signals were available, Applicants' repeat the argument provided above with respect to Hara that Hara's image sensor cannot provide the data present in such modulated optical signals.

As Hara and Lazo, either alone or in combination, do not teach or suggest every element and limitation of Applicants' claim 1 as now set forth, Applicants respectfully request that the rejection of claim 1 under 35 U.S.C. 103(a) be withdrawn. Independent claims 12 and 19 recite similar language to claim 1 and therefore are patentable for at least those reasons provided with respect to claim 1. Claims 3-11, 14-18 and 20-25 depend directly or indirectly from the patentable independent claims 1, 12 and 19, and include all of the limitations of the respective base claim. Therefore Applicants submit that these dependent claims also overcome the rejection for at least those reasons provided above in connection with claim 1, and Applicants respectfully request that their rejection be withdrawn.

Applicants' independent claim 26 as now set forth recites three elements: a memory module, a tag processor and an optical modulator. More specifically, claim 26 recites that the optical modulator generates "an optical data signal that is modulated in response to the communications data signal" where the communications data signal comprises the stored asset data. Applicants repeat the arguments set forth above with respect to claim 1 regarding how Hara and Lazo do not teach or suggest emitting an optical signal that is modulated with asset data. Because Hara and Lazo, either alone or in combination, do not teach or suggest every element and limitation of Applicants' claim 26 as now set forth, Applicants respectfully request that the rejection of claim 26 under 35 U.S.C. 103(a) be withdrawn. Claims 27-33 and 36-40 depend directly or indirectly from patentable independent claim 26, and include all of the limitations of claim 26. Consequently, Applicants respectfully request that the rejection of claims 27-33 and 36-40 be withdrawn.

Rejection of Claims 34 and 35 under 35 U.S.C. §103(a)

The Office Action rejects claims 34 and 35 under 35 U.S.C. §103(a) as being unpatentable over Hara and Lazo in view of U.S. Patent No. 7,131,136 to Monroe. Applicants respectfully traverse the rejection of claims 34 and 35.

Claims 34 and 35 depend indirectly from patentable claim 26. As claims 34 and 35 depend from an allowable base claim and incorporate all of the limitations of the base claim, Applicants submit that claims 34 and 35 are allowable based on the reasons provided above in connection with their base claim. Thus Applicants respectfully request that the rejection of claims 34 and 35 be withdrawn.

CONCLUSION

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims that have not been expressed.

In view of the remarks made herein, Applicants submit that the application is in condition for allowance and request early favorable action by the Examiner.

If the Examiner believes that a telephone conversation with the Applicants' representative would expedite allowance of this application, the Examiner is cordially invited to call the undersigned at (508) 303-2003.

Respectfully submitted,

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